



Built Better To Last Longer

**Residential
Central Heat Recovery Ventilator**

User Manual
Superventor Series
Models

SHRV115RD, SHRV130RD, SHRV190RD, SHRV240RD

Installation Information

Installing Contractor

Telephone Number

Unit Model Number

Unit Serial Number

Installation Date



Summerraire Mfg.
Peterborough, Ontario,
Canada, K9J 6X6



INTRODUCTION

This Manual provides you with an introduction to the principles of Heat Recovery Ventilators (HRV), the operation and maintenance of your unit, guidelines to troubleshooting minor problems as they may occur and an outline of your warranty. Each of these areas are described fully under their specific headings as set out in the Table Of Contents.

To obtain information relating to the installation, technical specifications and exploded parts diagram for your unit, please refer to the Installation Manual.

We congratulate you on your purchase of a Summerraire unit and thank-you for choosing SUMMERAIRE. We are confident that your Summerraire HRV will provide many years of fresh air comfort to your family.

Table of Contents

1. Description of Your Unit and its Benefits	3
2. Suggested Operating Instructions	4
3. How to Operate Unit and Related Controls	6
4. Optional Controls.....	9
5. Basic Components of your HRV	13
6. Maintenance	15
7. Troubleshooting	18
8. Warranty	20

1. DESCRIPTION OF YOUR UNIT AND IT'S BENEFITS

Since the energy crisis in the early 1970's, governments and the building community have sponsored many programs and changed codes to foster reduced energy requirements and create energy costs savings for the consumers. Each of these efforts, while improving the energy efficiency of our homes and buildings, has resulted in the loss of natural ventilation and trapped excess humidity and pollutants indoors.

It is due to this air tightness that your dwelling or place of business will incur humidity from everyday activities such as cooking, bathing, washing, indoor drying of clothes and normal breathing and perspiration. Pollutants such as smoke from cooking and fireplaces or wood burning stoves, dust, pollens, airborne viruses and molds and radon gas can also be trapped in your residence.

Your SUMMER Aire Heat Recovery Ventilator (HRV) is designed to resolve these problems by providing fresh air into your home or building while exhausting an equal amount of stale, humid air. This "exchange" process enables you to remove undesirable pollutants continuously as well as excess humidity during the heating season. The advantage offered by your HRV is that it transfers the energy from your exhausted (inside conditioned air) to temper the incoming fresh air system.

2. SUGGESTED OPERATING INSTRUCTIONS

Anytime the HRV is powered on allow 20 seconds for the main control to reset prior to making any operational selections.

Heating Season

Turn HRV ON, fan speed will cycle to previously select mode of operation. Continuous low speed ventilation is recommended to ensure that fresh air is available to building occupants.

If your home feels too humid or if you have water condensation on the windows, rotate the built-in dehumidistat Dial (left side of HRV). Set dehumidistat control between 30-40% humidity.

If your home feels too dry: rotate dehumidistat Dial (left side of HRV) slowly in a COUNTER-CLOCKWISE direction in 5 point increments and allow HRV to run in this position for 24 hours. If symptom continues, repeat this step. Also, if there is a humidifier installed, check to make sure it is working properly.

If a higher rate of continuous ventilation is desired: Press the SELECT button (located at left hand side of HRV) once to change to the next run speed.

If HRV continuous ventilation is not desired (not recommended), press the SELECT button (left side of HRV) until LED at AUTO/OFF is illuminated. HRV will not run unless a wall control is activated. Remote Touch Pad will activate 20/ 40/60 minutes of high-speed ventilation and then the HRV will return to AUTO/OFF. Dehumidistat activation results in high-speed ventilation until humidity level of indoor air is less than the dehumidistat setting, then the HRV will then return to AUTO/OFF.

Note: If your house is too dry, it's best to install a humidifier rather than to turn the HRV off.

Air Conditioning Season

Continuous ventilation is recommended when the house is being heated or cooled, anytime windows are closed. For summertime operation of the HRV, turn the dehumidistat setting counter clockwise to off (80%), set run speed to LOW. Changing the stale indoor air with fresh outdoor air is just as important in the cooling season as it is in the heating season!

If no HRV ventilation is desired (not recommended): Press SELECT button (upper left of HRV) until LED at AUTO/OFF is illuminated. HRV will not run unless a Remote Touch Pad is activated. Wall control activation results in 20/40/60 minutes of high-speed ventilation. After 20/40/60 cycle the HRV will return to AUTO/OFF. Continuous low speed HRV ventilation is recommended throughout the year.

REMOTE CONTROL DEVICES

SCOUT (Remotely Located)

Fan speed selection, Auto/Off and system Off maybe selected. The HRV defrost cycle is also displayed when active.

20 minute Touch Pad; 20/40/60 minute Touch Pad;

Touch Pads switch the HRV to high speed for 20/40 or 60 minutes. Each touch pad station will illuminate while the HRV is running at high speed.

Note: 20 Minute Touch Pad will not respond to a selection while a dehumidistat or crank timer is active.

Remote wall dehumidistat;

When using a remote wall dehumidistat, set the HRV built-in dehumidistat (left side of HRV) to OFF. Adjust humidity level from the wall dehumidistat only.

Watchman and Sentinel II wall controls;

When using these wall controls, set the HRV built-in dehumidistat (left side of HRV) to off. Operate the HRV as outlined above, but from the wall controls. Refer to specific control operation guides in this manual for further information.

3. HOW TO OPERATE UNIT AND RELATED CONTROLS

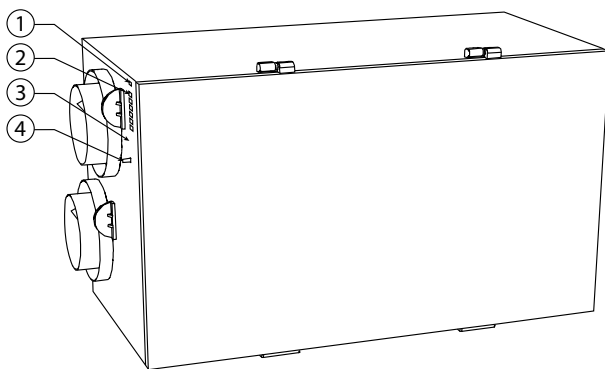
Anytime the HRV is powered on allow 20 seconds for the main control to reset prior to making any operational selections.

To realize the full benefit of your HRV, it should be operated continuously to control humidity and supply fresh outdoor air.

Continuous ventilation of your home is very important, and as the need arises to introduce higher levels of ventilation, you can select increased fan speeds at the HRV, or if installed, at remote devices such as; TOUCH PAD TIMERS, or SCOUT, WATCHMAN or SENTINEL controls.

This section reviews the basic operation of your HRV and related controls to maximize your home comfort.

All units are equipped with a Safety door switch, built in On/Off switch, Variable Speed Fan control, Dehumidistat control and have automatic damper defrost control, which is preset at the factory.



1 - Power On/Off Switch

2 - Option Select Button and Status Display Panel

3 - Summer / Winter Switch

4 - Internal Dehumidistat

On/Off Switch

The ON/OFF switch supplies and disconnects power to the HRV control board. When positioned in the ON position, this switch will illuminate. The switch will not illuminate if the power supply is disconnected or the switch is turned to the OFF position.

Option Select Button

By depressing the SELECT button momentarily, you can select low, medium or high ventilation fan speeds, as well as the AUTO/OFF or SYSTEM OFF modes. The selection will be indicated by the illumination of the respective LED on the HRV display panel.

Auto/Off

When this mode of operation is selected, the HRV ventilator fan will be turned off until activated by the internal dehumidistat or an optional external control such as a Wall Mount Dehumidistat, Wall Switch, Touch Pad Timer, Scout, Watchman or Sentinel control. This selection is displayed by the continuous illumination of the Auto/Off LED on the HRV, SCOUT, WATCHMAN and SENTINEL controls. When the fan is activated automatically or manually at a Touch Pad, it will be indicated by the flashing On and Off of the High-speed indicator on the control panels.

High Speed Flashing

When the internal dehumidistat or an external control has activated the HRV to high speed, the High Speed LED light will illuminate and flash. Once the device initiating the high speed cycle has been satisfied, the HRV control fan will reset to the pre-selected mode and the flashing High Speed LED will turn off.

Summer / Winter Switch

This switch must be positioned in the summer position when the optional summer core is installed in the HRV. This will cause the HRV to shut down should the air temperature entering the HRV fall below -15°C (5°F). This prevents permanent damage to the core. Position this switch to winter when the winter core is used to ensure correct operation during colder periods.

Status Display Indicator Lights

The LED indicator lights illuminate to indicate the current active mode of operation. The defrost indicator will illuminate when the HRV cycles into the automatic defrost cycle; this occurs at a predetermined cycle time whenever the outside air stream entering the HRV is colder than -3°C (26°F).

Defrost Cycle

All models are equipped with electronically controlled damper defrost. When the outdoor temperature entering the HRV drops below -3°C (26°F) the defrost timer is activated. After approximately 30 minutes of ventilation (during which time the core unit may experience some frost build-up during the heat recovery process) the timer activates the damper door mechanism which closes off the fresh air supply port, opens the defrost port and the defrost led illuminates. After approximately 5 minutes of defrosting the recovery core, the damper door reverses direction and reopens the fresh air port and the unit returns to normal operation and the defrost led turns off. The cycle will repeat until the outdoor temperature entering the HRV rises above -3°C (26°F).

Internal Dehumidistat

This control regulates the desired amount of humidity in your home during the heating season. By simply adjusting the rotary knob on the left hand side of the HRV, varied levels of relative humidity can be selected. During the colder months of winter, the Internal Dehumidistat should be set to an industry recommended comfort range of 30% to 40% relative humidity (R.H.). If the house feels too dry, then adjust the setting higher and if too damp, then adjust the setting lower. During these colder months, the Internal Dehumidistat should be set lower if excessive moisture develops on the windows. In the warmer months, when the outdoor humidity is equal to or greater than the indoor humidity, the dehumidistat should be turned to the OFF position.

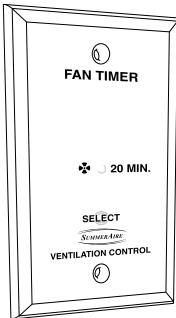
OPTIONAL CONTROLS

20 Minute Remote Timer Touch Pad Model ECPBT

This 20-Minute Touch Pad **MUST** be connected to the “CT” terminals on the HRV exterior. This control will not function if connected PBT connection points.

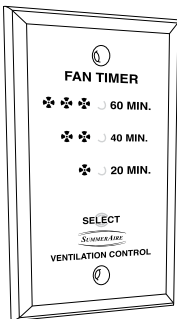
Once activated by a momentary push, approximately three seconds, of the SELECT button on the Touch Pad the HRV is switched to high speed ventilation and the Touch Pad LED will illuminate. The HRV will reset to the previously selected mode of operation once the 20 minutes have expired. To cancel the selection, depress the SELECT button on the 20-minute Touch Pad for a minimum of 3 seconds. The selection can also be cancelled at any other optional control by momentarily depressing the SELECT button.

NOTE: This control will not respond while a crank timer is operational.



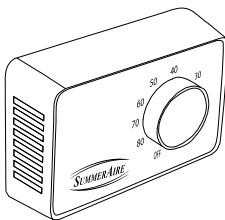
Remote Timer Touch Pad - Model PBT

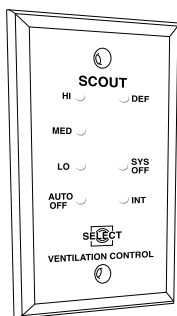
Timer Touch Pads are typically installed in any room where 20/40 or 60 minutes of high-speed ventilation may be desired, i.e. bathrooms and/or kitchens. Once activated by a momentary push, these buttons illuminate to indicate high speed activation. If more than one touch pad is installed in the system then all will illuminate upon activation until the timed sequence has expired. To cancel a selection simply continue to push the select button until it turns off. The display LEDS on the touch pad will illuminate to represent the time remaining.



Wall Mount Dehumidistat - Model SRDEH

This control is typically installed in an area of the home where humidity may require automatic monitoring. This could be a central location (i.e. near furnace thermostat) or in a specific room (i.e. kitchen, laundry etc.).

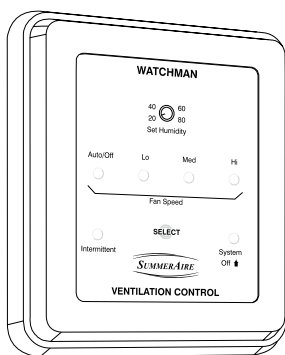




Scout Control

This control is detachable from the HRV to provide a remote control operation of the HRV. Once removed from the HRV one can only turn the power off at the HRV. By positioning the Scout remotely to the HRV, you can adjust fans speeds, select auto/off, intermittent or turn the main HRV control Off. When the HRV has been turned off using the Scout, power still remains on at the HRV on/off switch however all external controls will not function. Intermittent- In this mode the ventilation fan will run for 20 minutes and turns off for 40 minutes. This cycle will continue until cancelled. External devices are active.

WATCHMAN CONTROL



The WATCHMAN is an intermediate remote control. It permits the following function selections;

SYSTEM OFF- In this position all internal and external controls are disabled. Power remains on at the HRV.

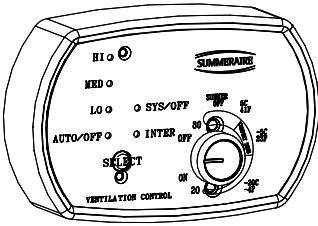
FAN SPEED- Low Medium or HIGH can be selected.

INTERMITTENT- In this mode the ventilation fan will run for 20 minutes and turns off for 40 minutes. This cycle will continue until cancelled. External devices are active.

AUTO/OFF-In this mode the ventilation fan remains off until activated by either the internal dehumidistat or an external control such as a Touch Pad or Dehumidistat. During the off mode the cold air port in the HRV is closed.

RELATIVE HUMIDITY- By rotating the control dial you can select desired levels of indoor humidity. Humidity reduction will only occur during the heating season. Should the set point be below the indoor relative humidity the HRV will automatically switch to high speed (provided that the active mode selected permits the remote device to be active).

SENTINEL II CONTROL



The optional Sentinel II control is an external control device providing the user selectable options. These include, Relative Humidity (RH) selection, Auto/Off, Low, Medium and High-speed ventilation, System Off and Intermittent ventilation.

RELATIVE HUMIDITY – By rotating the control dial the indoor RH can be set. In this mode the HRV responds by automatically switching to HIGH-speed ventilation should the indoor humidity be high than the selected level. Humidity reduction only occurs during the heating season.

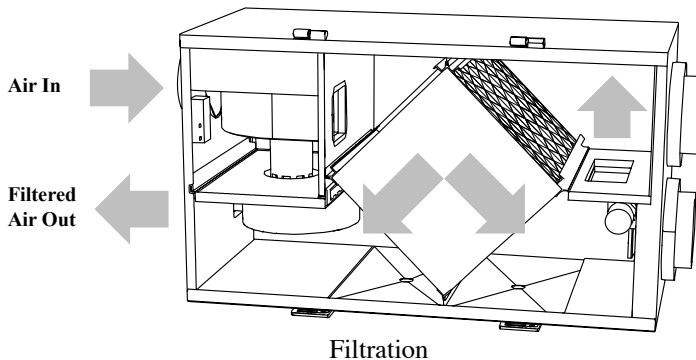
AUTO/OFF – Ventilation remains off until activated by the internal Sentinel dehumidistat or a remote control device such as a dehumidistat or a timer.

SYSTEM OFF – HRV and external control devices are turned off. Power does remain on at the HRV control.

INTERMITTENT – When selected, 20 minutes of LOW speed ventilation is provided followed by 40 minutes of off time. This cycle repeats until another selection is made. All external devices such as dehumidistat and timers are functional. If a dehumidistat is activated the HRV will switch to High speed ventilation then return to Intermittent when deactivated.

SCOUT / WATCHMAN Indications

MODE	SCOUT	WATCHMAN
Intermittent Fan Off	Auto Off, Blink	Intermittent LED ON, Blink Auto Off
Intermittent Fan Lo	Low, Blink	Intermittent LED ON, Blink Low
Filtration	Default fan speed, Slow Blink	Default fan speed, Slow Blink
Summer Switch on Temp <5deg°F	System Off, Blink	System Off, Blink



Model SHR130RD Illustrated

OPTIONAL SUMMER CORE DEFROST SCHEDULE

When using the summer core, the Summer/Winter switch at the left hand side of the HRV must be set to summer. When the summer switch is ON the following defrost schedule is used.

When the outdoor air temperature entering the HRV is below -10°C (14°F), the defrost schedule will be approximately 8 minutes of defrost and 24 minutes of ventilation. When the temperature is below -20°C (-4°F), the defrost schedule will be 10 minutes of defrost and 20 minutes of ventilation.

When the temperature falls below -29°C (-20°F) the HRV will go into summer shutdown. If the temperature remains below -29°C (-20°F) for 4 hours or more, the dampers are closed and fans turn off. The power must be turned off and the system restarted to go back into normal operation.

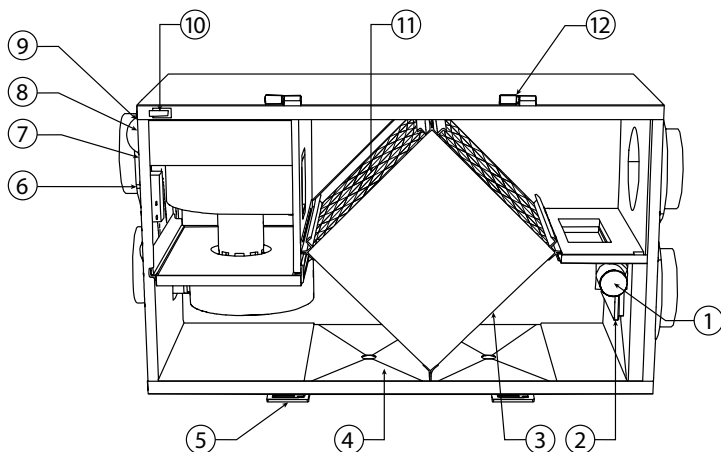
When the system goes into low temperature shutdown an “INSTALL WINTER CORE” message appears on the SENTINEL optional control.

When the summer core is installed in the HRV the select switch on the left hand side must be set to summer. **Failure to do so will result in permanent core damage.**

When using the winter core, this select switch must be set to winter to ensure proper HRV operation during the colder periods.

4. BASIC COMPONENTS OF YOUR HRV

Model SHRV130RD, SHRV190RD



- | | | |
|-------------------------------|-----------------------------------|--------------------------------|
| 1 - Damper Motor | 5 - Front Door Latch | 9 - Power On/OFF Switch |
| 2 - Damper Door | 6 - Internal Dehumidistat | 10 - Door Safety Switch |
| 3 - Heat Recovery Core | 7 - Mode Select Button | 11 - Air Filter |
| 4 - Condensate Tray | 8 - Summer / Winter Switch | 12 - Front Door Hinge |

Do not attempt to operate damper door manually.
To do so will result in damper motor failure.

Heat Recovery Core (winter core)

One of the most important components of your HRV is it's Heat Recovery Core. In the winter months, during the heating season, this plated Core recovers energy from the stale humid air being exhausted and transfers this energy to temper the incoming colder fresh air. This process also reduces indoor relative humidity during this time.

In the summer months, during the air conditioning season, the incoming fresh air is conditioned as it passes through the Core. This occurs as the conditioned indoor air being exhausted cools the Core and the incoming fresh air.

The Winter Core is designed of an impenetrable polymer material so that the air streams remain separate (no cross-contamination) thereby ensuring that the fresh air is not exposed to the potential contaminants and humidity in the exhausted air stream.

Optional Energy Recovery Core (summer core)

The Summer Core not only conditions the incoming air but also transfers moisture contained in the incoming fresh air to the exhausting stale air. This benefit reduces the cooling load on the air conditioning system.

Safety Door Switch

The HRV safety switch is activated when the main front door is fully closed. When the front access door is opened electrical power is disconnected to the HRV main control board disabling all functions of the HRV.

Internal Dehumidistat

Indoor relative humidity (RH) is monitored continuously by the internal dehumidistat during fan on cycles. By rotating the dial at the left hand side of the HRV you can select the desired level of indoor humidity. Range of operation is approximately 20% to 80%. Should the level of RH exceed the level selected then the HRV will automatically switch to high speed until the indoor RH drops below the level selected. The HRV fan must be on for the dehumidistat to function correctly. Note that during the summer months when the outdoor humidity may be at elevated levels, all dehumidistats must be turned to the off position to prevent the HRV from running on high speed continuously. Indoor humidity will only be reduced when outdoor relative humidity is lower ie. during the heating season.

Damper Door

This damper door is operated automatically by the main HRV control should the outdoor air temperature entering the HRV fall below -3°C (26°F). When activated, this damper closes off the stale exhaust port within the HRV and opens the internal defrost port. The defrost cycle is approximately 5 minutes in duration, followed by a ventilation cycle of approximately 30 minutes. This cycle repeats until the outdoor air temperature entering the HRV rises above -3°C (26°F). During the defrost cycle it is not unusual to see water condensate dripping through the drain lines.

Do not attempt to reposition this damper, as permanent damage to the damper motor will result.

5. MAINTENANCE

In addition to the maintenance procedure outlined below, we recommend that you inspect the exterior hoods on your unit every month. This is to ensure that your exhaust and fresh air supply ports are not restricted by debris (i.e. cottonwood, leaves, grass, snow or frost (ice) buildup on the mesh cover(s). Restriction of these ports will cause the unit to work inefficiently and malfunction.

Caution: Unplug the unit prior to performing maintenance or working inside the unit. Please do not attempt to reposition the damper door as this will cause permanent damage to the motor.

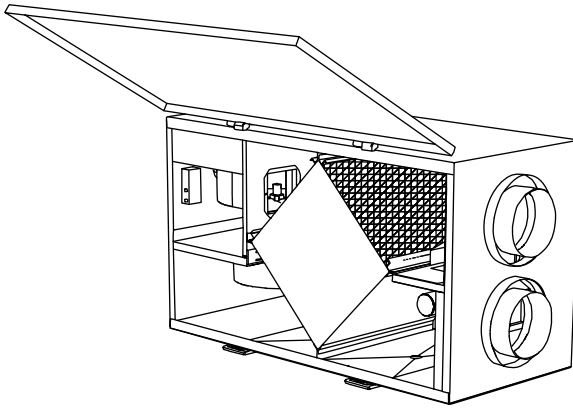
Every Six Months

Disconnect the power supply

1. Unlatch the door latches at the bottom of the front door panel and gently raise the door to a level position while securely holding the door panel in place (apply pressure to the left) (CAUTION - Door can slip off hinges). Once open, hold the access door securely and slide it to the right. This will disengage the upper hinges allowing the door to be removed.
2. Remove the filters as shown and wash in warm, soapy water, rinse, let dry and replace.
3. Remove the HRV Winter Core by sliding it out evenly along the channel tracks, wash in warm soapy water, rinse, let dry and replace. To replace properly, slide the core back into the tracks with the label attached to the core indicating the top upright position of the Core, in the most top upright location.

Caution: Do not expose the Summer Core to water. To do so will result in permanent damage. Simply vacuum the surfaces of the summer core lightly with a brush attachment. We suggest that you wear gloves when handling the Cores as some edges may be sharp.

4. Clean and inspect the condensate trays by wiping with a damp cloth. Observe the tray outlets and the drain hose to ensure they are clear of debris. If debris is present flush out the drain system with warm soapy water or have the hose replaced.

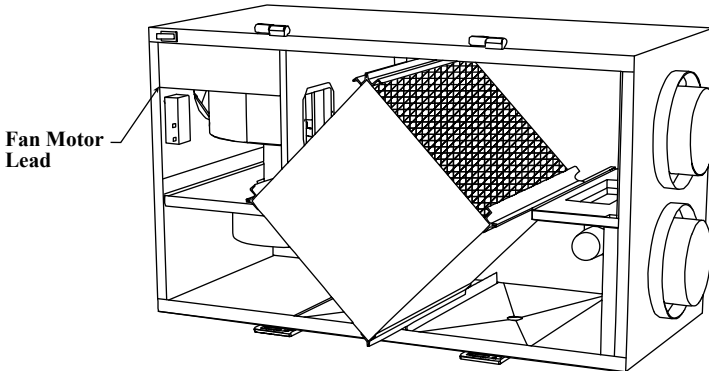


EVERY THREE YEARS - CLEAN FAN BLADES

Fan blades can accumulate dust and dirt creating reduced airflow and potential imbalance of the blades. **It is also our recommendation that you consider having a qualified service contractor perform your Fan Blade maintenance.**

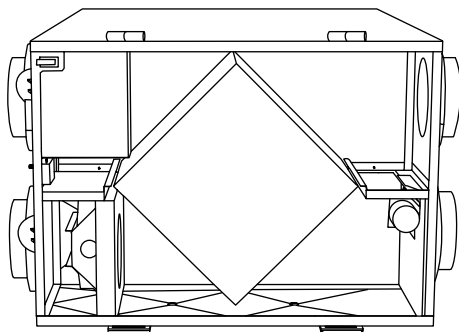
Fan Maintenance

Model SHRV130RD, SHRV190RD



CAUTION: Internal HRV components can have sharp metal edges - Recommend wearing gloves.

Model SHRV115RD, SHRV240RD



1. As described in the prior section, unplug unit and open access door (swings up).
2. Slide the air filters and Heat Recovery Core forward and remove.
3. Disconnect the fan motor wire leads at the connector on the left side below the control box. (MODELS SHRV130RD and SHRV190RD only)
4. Slide the fan tray assembly forward. (Models SHRV130RD & SHRV190RD only)
5. Using a small brush (i.e. toothbrush), clean the wheel blades. Caution must be exercised not to disturb the balancing weights on the wheel blades.
6. Vacuum and reassemble. Take notice of the positioning label on the core. The Core must be positioned correctly to ensure proper HRV function.
7. Reconnect the power supply to the fan motor.

6. TROUBLE SHOOTING

Control Functions		
Symptom	Possible Cause	Possible Solution
Nothing works	Front access door safety switch	Ensure that HRV is plugged in
	Lack of power.	Ensure that outlet in use is powered
	Front access door safety switch	Unlatch door, inspect safety switch
	Defective component	Contact your installer
HRV front panel On/Off switch illuminates but fan is not running	Mode of operation selected set to “Auto Off”	Select a different operation mode at HRV or remote device
	Defective component.	Contact your installer
HRV status panel flashing HIGH Continuously	HRV internal dehumidistat set too low.	Adjust dehumidistat RH setting to a higher setting.
	External dehumidistat set too low.	Adjust external dehumidistat set point higher.
	Remote push button activated.	Check to see if a push button has been activated.
	Defective dehumidistat.	Contact your installer.
	Defective PC board.	Contact your installer.

Operational Functions		
Symptom	Possible Cause	Possible Solution
HRV is operating but little or no air flow is present.	Air stream blockage	Check outside weather hoods for blockages such as snow, grass, insects, cottonwood.
	Dirty air filters or heat exchanger Core.	Inspect and clean air filters and core.
	Heat exchanger core frozen solid.	Open HRV access door and defrost Core. Contact your installer. Have unit inspected for defective sensors, check system balancing.
	Defective component.	Contact your installer.

Control Functions

Symptom	Possible Cause	Possible Solution
Poor air quality excess moisture on windows.	HRV turned off HRV running on too low a speed	Adjust ventilation rate higher and monitor conditions overnight. Adjust further if necessary.
	If HRV is connected to furnace ductwork (both exhaust and supply) Temporary conditions causing effect.	Ensure that furnace is turned on to circulate air. Activate to high speed at push button or Airmonitor.
	Excessive humidity conditions within home. Turn down internal or remote dehumidistat.	Consider source such as improper foundation drainage, moisture intrusion into exterior walls, moisture generation, excessive moisture conditions. New wet construction.
	Indoor air temperature too low.	Keep temperature above 18°C (64°F)
Indoor air considered too dry	HRV speed selection too high for conditions.	Set to a lower speed. Check dehumidistat settings. Adjust higher. Set to intermittent mode of operation. Temporarily use a humidifier.
Excessive frost build up on ducts connected to HRV. Supply air too cold.	Extreme outdoor air temperatures.	Operate HRV on intermittent. Operate HRV at a lower ventilation rate. Have a duct heater installed.
	Imbalance in air flow streams.	Have the system's balancing checked.
	Defective defrost system.	Have the defrost system checked.
	Defective Vapor Barrier.	Inspect duct connections at collars, look for vapor tear and repair.

7. WARRANTY

HRV Unit

Trent Metals Limited warrants the entire Heat Recovery Ventilator to the original purchaser should it prove to be defective by reason of defective material and or faulty workmanship with in two (2) years of the purchase date. Extended warranties are offered for the “Core” and “Electrical components” as outlined below.

Core

Trent Metals Limited warrants the “Core” of the Heat Recovery Ventilator to the original purchaser if the core has become defective by reason of defective material and/or faulty workmanship. This warranty applies to the original purchaser of the Heat Recovery Ventilator for as long as they own the dwelling.

Electrical Components

Trent Metals Limited warrants the “Electrical components” of the Heat Recovery Ventilator to the original purchaser if any of the electrical components have become faulty by reason of defective material and/or faulty workmanship. This warranty applies to the original purchaser of the Heat Recovery Ventilator for a period of five (5) years from the date of purchase as long as they own the dwelling.

GENERAL PROVISIONS

Summerraire Manufacturing will supply a replacement HRV unit or component as prescribed in the foregoing section, F.O.B. Peterborough, Ontario, Canada. Replacement units and/or components are warranted for the remainder of the original warranty period.

This warranty expressly supersedes all other warranties and obligations of Trent Metals Limited. No person has authority to alter or modify the terms of this warranty in any manner.

This warranty does not include any freight, labour, including diagnostic labour, or sales tax that might be incurred by the purchaser if a unit and/or parts require replacement.

Under no circumstances shall Summerraire Manufacturing be liable to the purchaser or any other person(s) for any consequential damages, whether arising out of breach of warranty, breach of contract, negligence or otherwise.

Keep your warranty at work for you. Please complete and mail your Warranty Registration Card to **Summerraire Mfg., 2040 Fisher Drive, Peterborough, Ontario, Canada, K9J 6X6** to register this warranty.



**Summerraire Mfg.
2040 Fisher Drive,
Peterborough, Ontario
Canada, K9J 6X6**